

bulls-i
Vehicle Drive Recorder



phoenix
HD RESOLUTION BLACKBOX ETK-B2200

User Manual









Warning and Notice for Safety

Warranty and Responsibilities

- This product is a kind of safe driving assistance device. For every damage coming from product failure, data loss and other problems caused during its use, the producer is not responsible.
- This product is an assistance device that was invented for the recording and storage of the exterior images of vehicle. Please be informed that depending on the driving environment and vehicle specifications, certain functions may not be supported, and for the quality improvement and safety, the performance support through firmware update can vary according to the type of product. You can use the product only as a reference for the check of driving-related videos as the recording is not always carried out if the environmental elements are not in compliance with those indicated.
- According to the status of microSD card, it can happen that the recording cannot be performed.
- This product records and stores the images at time of accidents of vehicle, but we cannot guarantee that all accident situations are recorded. In case of the accidents accompanied by slight shock, the shock sensor may not work and consequently, the images may not be recorded as event images

Warning and Notice for Safety

This section is provided to help guarantee the safety of the user and prevent the damage of assets and other following problems. Please read it thoroughly and use the product correctly.

 Warning	If the indications are not observed, there can be the case that people are killed or seriously injured.	 Notice	If the indications are not observed, people can get injured or material damage can occur.
	Do not operate the product while driving. The operation of product during driving can cause traffic accidents. Before operating it, stop your car in a safe place.		The user may not install, disassemble or modify the product without complying with the instructions. If the user install, disassemble or modify the product without following the instructions, product failures can occur and all liabilities shall lie with the user himself/ herself.
	Do not place any object on the product and do not cover it. without following the instructions, product failures can occur and all liabilities shall lie with the user himself/ herself.		Do not operate the product if it malfunctions. Turn off the power if any foreign particle or water is found in the product, or smoke comes out from it. Take the next step by calling a selling agent.
	Do not use the product when failure occurs. In case of failures, disconnect the power and then refer to an agent or the Call Center.		The fuse of the cigar jack shall be one with a rated capacity. For the replacement of the fuse, use a fuse with a rated capacity. If the rated capacity is not observed, fires can be caused by the inobservance.

Warning and Notice for Safety

	Use only genuine products when you replace any components like cigar jack cable and mounting kit. For the failures and accidents that happen due to the noncompliance with the indications (use of the components provided by our company), all responsibilities shall lie with the user.		At time of product installation, install it in the way that it does not obstruct the view of the driver. If you do not follow this indication, accidents may occur. Install the product on the upper center side of the front glass of the vehicle.
	Do not drop the product into water or keep it in a humid place for a long time. For the failures caused by submersion, refer to a selling agent.		Do not expose the product to intense heat by using any stove, microwave oven or hair drier. It can explode, be transformed, and failures may happen, too.
	Install the product in an adequate position in the way that the operation of interior devices, e.g., airbag systems, is not disturbed. The disturbance of operation can result in injuries.		Keep the product at the proper temperatures, 0°C-50°C, while using it. If you do not maintain the temperatures, the performance of product can deteriorate or its hardware can be damaged.
	Avoid placing the product near water or any foreign materials such as beverages and chemical substances. The product can be damaged or failures may be caused.		Do not turn off the power or perform the operation abnormally while it is in operation. The microSD card and the product itself can get damaged.

Warning and Notice for Safety

Notice

	Do not touch the product with your greasy or wet hands. The product can be damaged or failures may be caused.		Do not put foreign substances into the exterior memory card insertion slot. The memory card may not be inserted and failures may be caused.
	Avoid giving a strong shock to the product. The product can be broken or failures may be caused.		Do not touch the product with sharp-pointed tools like drill and nail. The product can be damaged or failures may be caused.
	Avoid placing the product near magnets, things which produce electromagnetic radiation or Braun tubes. The product can be damaged or failures may be caused.		Do not put any sticker on the product and exterior memory card, and do not color them unnecessarily. The product and memory card can be damaged or failures may be caused.
	Remove the foreign materials and overly tinted sun shade film that obstruct the recording. They can degrade the image quality during the recording.		Do not pull out the microSD memory card forcibly while the product is in operation. The data of microSD memory card may be lost and failures may be caused.
	Use genuine microSD memory cards. If you use non-genuine microSD memory cards, the product can be damaged, the data of the cards may be lost and failures may be caused.		Replace the microSD memory card with a new one when its life span has expired. If the card is used for a long period, the recording may not be performed normally.



Notice about data loss (microSD memory card management)

Pay close attention to the damage of the data of microSD memory card.

- The microSD memory card is a very sensitive product whose quality can deteriorate quickly depending on the exterior environment and shocks generated during its use. Be careful that shocks are not given to the memory card and it is not damaged.
- When the microSD memory card has been damaged due to the user's inattentive behavior or exterior environment, the producer does not undertake any responsibility.
- ※ When you replace the microSD memory card with a new one, use the same product model provided by our company at time of purchase.

The cases where microSD memory card and its data can be damaged:

- External shocks are given to the car black box while it is installed or detached; microSD memory card and its data can be damaged,
- The power cable is disconnected or the power is disconnected in an abnormal way while the car black box is in operation; microSD memory card can be damaged
- Shocks are given to the black box when it is in operation; the files of microSD memory card and the card itself can be damaged. To minimize the damage, we recommend that you check the data periodically and backup/reproduce the files.



Notice Format microSD memory card periodically, once a month.



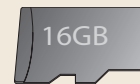
Notice about the use of microSD memory card

The microSD memory card is an expendable that has a life expectancy. Accordingly, after using it for a certain period, check whether it is damaged and replace it with a new one if it needs to be exchanged to be able to use it continuously without big problems. The durability of the product may vary depending on the treatment method and the term for which it has been used.

Recording capacity of each microSD memory card



3hr.-3hr. 30m



6hr.-6hr. 30m



12hr.-12hr. 30m

※ This product is provided as a car safety assistance product. Therefore, in case of accident, all responsibilities lie with the consumer. Use it according to its usage.

Recommended microSD memory cards

The recommended microSD memory cards, genuine bulls-i 8GB / 16GB microSD memory cards, can be purchased on the authorized web site. To purchase the cards, follow the steps: Customer Center of www.bulls-i.com website > Notice > "microSD memory cards compatible with the product"

The transcend class 10 microSD memory card is compatible with the product, too. (HD and SDHC supported)

※Warranty period of microSD memory card: 6 months



Notice about GPS System

- After the purchase, if the product is not used for a somewhat long period (more than 3 days), it can take a long time to identify the current location (Time for initial reception).
- The GPS signal reception rate can become degraded under the influence of the climate conditions like rain and fog and the jamming because of the proper character of electric wave.
- The GPS Receiver operates best under temperatures of 0°C-60°C. In hot summer and cold winter, problems can happen as the temperature inside the car goes up or down, higher or lower than that of outside. And, thus, you should keep the GPS receiver at the proper temperatures.
- The GPS reception could be impeded in certain areas such as zones under elevated road, tunnels and building-concentrated areas. In the case, the GPS reception can deteriorate.
- On account of the special coating and tinted sun shade film on the glasses as well as the electric waves emitted from the equipment inside the car, the GPS reception may be unstable and thus the receiver cannot work normally in certain types of cars.
- Around tall buildings and high-voltage power cables, the signals may become weaker or be cut off under the influence of high voltage.
- When you drive the car under the condition where the GPS reception is not good, it can take a long time to identify the current location, it will take more time than when the car is stopped.
- When you pass through the GPS shadow areas or the GPS reception is bad, the indication of time and velocity can be abnormal.

Main Functions of Product



HD Images

- 1080X720 (HD)
- Image (Video) compression: H.264



High Sensitivity GPS Receiver

- The information about the location, velocity and routing that is obtained from the GPS is indicated on Google Maps.



Security LED

- Under the parking mode, the Security LED is in "ON" status.



Parking Mode

- While the car is parked, the parking mode is activated when any motion or shock is perceived.



Voice Guidance supported

- Voice guidance function for user's convenience



Wide Angle of View

- 130° viewing angle



270° Rotary Camera

- Front-facing camera
- When its body is rotated, it is also used to record the images inside the car.



Battery Discharge Prevention Function

- The function is provided to prevent the battery discharge while the car is under parking mode.

Main Functions of Product



Voice Recording "ON / OFF"

- Privacy Protection
- "ON/OFF" Status Indicator LED



3-Phase Continuous Power Supply

- When the car is off, the parking mode begins automatically.



3-Axis Acceleration Sensor

- In case where excessive shocks occur to car, the 3-axis acceleration sensor automatically records the images.



microSD Memory card format

- The microSD memory card format is implemented in the product itself.



12V-24V Power



Shock (Event) Recording



Continuous Recording



Upgrade through microSD Memory Card

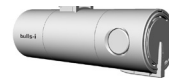


Sequential Deletion of Recorded Images

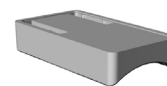


Function Setting

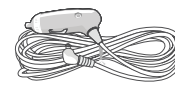
Checking Components



Body



Mounting kit



Power cable (Continuous power supply cable or Cigar jack cable)



microSD memory card



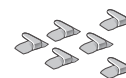
microSD memory card reader



3M tape (Used for fixation of mounting kit)



Quick Guide Manual



Cable clips



Exterior GPS (Not included)

The components that are not included in the product package can be purchased at the bulls-i shopping mall.
(<http://www.bulls-i.com>).




- The images of these instructions can be different from those of real products.
- The instructions can be modified without any prior notification to the users for the improvement of product performance.

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1. Introduction to Production

Phoenix: PHOENIX (ETK-B2200)



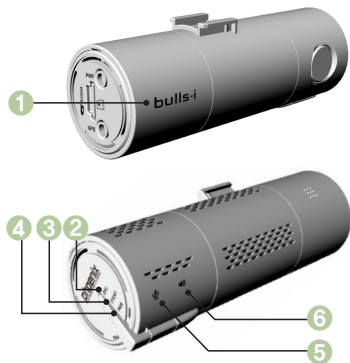
1	Camera lens	It records the images of the car in which the product is installed.
2	Power input terminal	It is used to connect to the power cable.
3	Memory card insertion slot	It is used to insert and remove the microSD memory card.
4	GPS input terminal	It is used to connect to the GPS cable.
5	Speaker (Buzzer)	The voice guidance is provided through the built-in speaker.
6	Mike button	(Short Key) Voice Recording On/Off (Long Key) microSD memory card format
7	Speaker button	(Short Key) Speaker On/Off (Long Key) System Initialization



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1. Introduction to Production

PHOENIX (ETK-B2200)



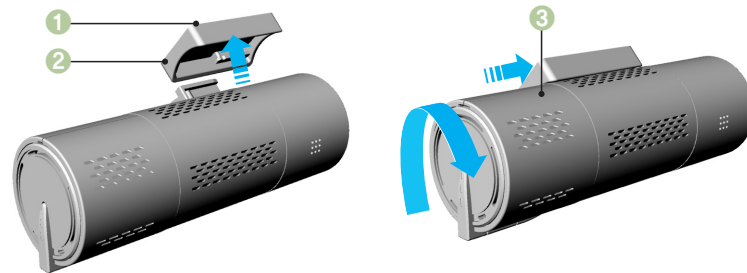
1	Security LED	Under the parking mode, it blinks, and while the car is parked, it is turned on under the event/motion recording.
2	GPS LED	The LED blinks while the GPS cable is connected, and is turned on when GPS signal reception begins. (Green Color)
3	Event LED	It's turned on during event (shock) recording, motion recording. (Red Color)
4	Power LED	While the power is connected, it blinks. After the connection of power, it is turned on. (Blue Color)
5	Mike LED	The LED is turned on when the voice recording is in "ON" status.
6	Speaker LED	The LED is turned on when the speaker is in "ON" status.



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- The instructions can be modified without any prior notification to the users for the improvement of product performance.

1. Introduction to Production

Name and Function of Each Part of Mounting Kit



	Name of Each Part	Function
1	Body Mounting Kit	The product body is attached to and detached from the kit.
2	Fixation of Mounting Kit	Using double-coated tapes, the mounting kit can be fixed on the front glass of the inside of the car.
3	Angle Control	The angle of product body can be controlled by the user.

2. Installation

Pre-Installation Notice

Notice regarding components

- Before installing the body, check well whether all components are included in the product package. >>p.11
- In case that any component is not included in the package, refer to a selling agent or the Call Center.

Notice regarding installation

The installation angle and position can have an important influence on the recording of the images during driving. Please follow the next indications:

- Install the body mounting kit on the center of car glass.
- Install the body correctly using the mounting kit provided by the producer.
- Do not place any object between the body and car front glass. And, the space shall not be covered with anything.
- Fix the body mounting kit using a double-coated tape. Be careful that any contaminants such as dust particles and oil should not remain on the part on which the body is fixed.

2. Installation

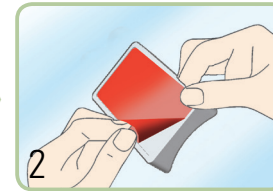
Installing the body

Check the general environment and the position on which the body shall be fixed. For the notice regarding the installation, please see page 3.

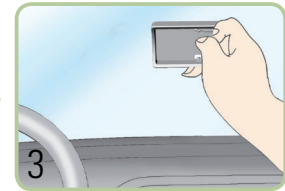
This device should be installed on the upper center side of the car front if you want to get the highest image quality after the recording.



With a dry cloth, clean the front glass part on which the product is to be fixed.

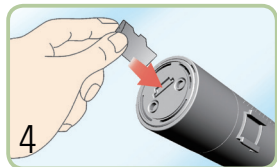


Remove the protection film of the double-coated tape on the mounting kit.

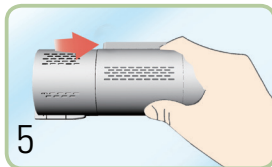


Fix the product on the glass assuring that there is no gap between the mounting kit and interior glass.

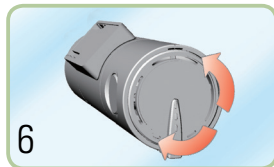
2. Installation<2-2 Installation of Body>



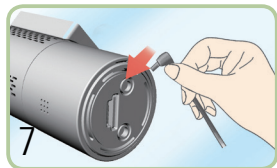
4
Insert the SD card well into the card insertion slot of the body.



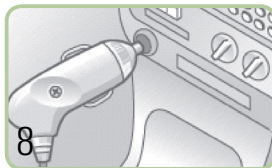
5
Fix the body into the mounting kit.



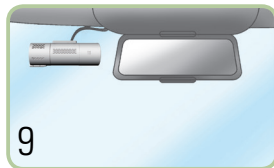
6
Controlling camera angles | Control the camera angles in the way that the lens of the body faces the center of the front of the vehicle.



7
Connect the power cable to the units PWR In port.



8
Insert the other end of the power cable into the vehicle's power outlet.



9
Cable arrangement | Arrange the cables cleanly using a cable holder.

2. Installation<2-2 Installation of Body>



.270° Rotation | When the recording of the inside of the vehicle is required, you can start the recording after rotating the body.



- An alarm message appears when the microSD card is not normally recognized. (Voice message, LED)
- For the connection of continuous power supply cables (3-phase), we recommend you refer to a qualified service center. (Black line: GND/White line: ACC/Red line: BAT(B+))
- For the products without GPS systems, the time setting is possible through the PC Viewer.

3. How to Use the Product

Power Connection and Continuous Recording



- The product is in "ON" status automatically when the power cable is connected.

Sound	Guiding comments after power connection – "We hope you have a safe drive with bulls-i."
	Guiding comments after boot completed - "Driving recording is beginning."
LED	Power LED (Blue) "ON"

- The product is in "OFF" status automatically when the power cable is disconnected.


Sound	Guiding comments – "bulls-i program is finishing."
LED	All LEDs "OFF"

Event (Shock) Recording




- The recording mode begins automatically when shocks are perceived.
- Event recording time: when shock is perceived, the recording mode is applied for the time of 15 sec. before and after each shock. (30 sec. total)

Sound	Event alarming sound – "Ding-dong Ding-dong"
LED	Event LED (Red) "ON"



- When event happens, the recording mode is applied for the time of 15 sec. before and after each event. (30 sec. total)



The diagram shows a horizontal timeline with a central vertical line labeled 'The moment when event happens'. To the left of this line is a dashed semi-circular arc labeled 'Pre-event recording time: 15 seconds'. To the right is a dashed semi-circular arc labeled 'Post-event recording time: 15 seconds'.

3. How to Use the Product

Voice Recording ON/OFF



- Press the MIC Button "Microphone" to turn on and turn off the voice recording mode (Initial setting: ON)

Sound	ON	Guiding comments – "Voice recording is beginning."
	OFF	Guiding comments – "Voice recording is stopping."
LED	ON	MIC LED "ON"
	OFF	MIC LED "OFF"

Speaker/Guiding Comment ON/OFF

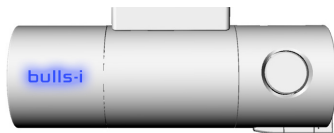


- Press the SPK Button "Speaker" to turn on and turn off the function. (Initial setting: ON)

Sound	ON	Guiding comments – "Speaker is turned on."
	OFF	Guiding comments – "Speaker is turned off."
LED	ON	SPK LED "ON"
	OFF	SPK LED "OFF"

3. How to Use the Product

Parking Mode



• If the continuous power is supplied, the parking mode starts automatically even when the car is off (ACC Off).

• When the car is on (ACC on), the parking mode stops automatically.

Sound	Guiding comments – "Parking mode is beginning."
LED	Under the parking mode, Security LED blinks. If Shock/Motion Recording starts with the car parked, Security LED is turned on. (N.B.: When the parking mode runs continuously, Security LED continues to blink.)

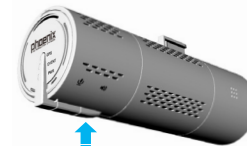
Sound	Guiding comments – "Parking mode is stopping."
LED	Security LED "OFF"

• The recording modes during parking are applied according to the values set through the bulls-i only viewer.

Continuous Parking	Continuous Recording, Shock Recording
Motion Detection Parking (Motion)	Motion Detection Recording, Shock Recording
Shock Detection Parking	Shock Recording

3. How to Use the Product

System Initialization



SPK Button

• Function Setting Initialization: when SPK Button is pressed for 5 seconds, System Initialization begins.

Button & Operation	Guiding Comment	LED Status
Press SPK Button for 5 seconds.	"Do you want to initialize the system?"	MIC LED & SPK LED Blinking
Confirmation of initialization > Press MIC Button.	"System Initialization is beginning."	MIC/SPK/GPS/Event LEDs Blinking
Cancellation of initialization > Press SPK Button.	"System Initialization has been canceled."	
After the initialization is completed, the product reboots automatically.	"The system is restarting."	



MIC Button

• microSD memory card format: when MIC button is pressed for 5 seconds, memory card format begins.

Button & Operation	Guiding Comment	LED Status
Press MIC Button for 5 seconds.	"Do you want to format memory card?"	MIC LED & SPK LED Blinking
Confirmation of format > Press MIC Button.	"Memory card format is beginning."	MIC/SPK/GPS/Event LEDs Blinking
Cancellation of format > Press SPK Button.	"Memory card format has been canceled."	
After the format is completed, the product reboots automatically.	"The system is restarting."	

3. How to Use the Product

Explanation of LED Status and Buzzer Sound

The LED status and buzzer sound of each situation are as follows:

Classification	Situation	Guiding Comment	LED Status	Note
GPS	GPS connection	"GPS system has been connected"	GPS LED Blinking	GPS cable connection after boot completion
	GPS signals perception	No comment	GPS LED "ON"	Normal GPS signal perception
	"GPS system has been disconnected"	"GPS system has been disconnected"	GPS LED "OFF"	GPS cable removal with black box "ON"
SD card error	SD card error	"Check memory card"		microSD card not inserted, Error happened
	SD card removal	"Memory card has been removed"	MIC/SPK/ GPS/Event LEDs Blinking	SD card removal with black box "ON"
Firmware upgrade	Firmware upgrade	"A new firmware version is available." -> "Firmware update is beginning."		Firmware upgrade through microSD card
	Reboot after upgrade	"The system is restarting."	Power LED Blinking	Restart after firmware upgrade
Format recommendation	Periodical microSD card formatting (recommendation)	"Periodical microSD card format is recommended."	Power LED "ON"	Periodical microSD card format recommended: 1 time per month
Discharge breaking	Discharge breaking operation	Buzzer sound – "Beep"	Power LED Blinking (Every 5 seconds)	The discharge breaking is carried out if the voltage falls below the preset threshold for longer than 1 minute.-> At restarting the car, the operation is canceled.
High-temperature prevention	High-temperature prevention operation	Buzzer sound – "Beep"	Power LED Blinking (Every 5 seconds)	The high-temperature prevention operation is performed if the preset prevention threshold is exceeded for longer than 10 seconds. -> If the temperature is maintained at 25°C below the threshold for 10 seconds, the operation is canceled

3. How to Use the Product

How to Remove microSD Memory Card

- 1 Turn off the car and disconnect the power cable from the power terminal of the body.
- 2 Remove the microSD memory card from the card insertion slot of the body by pressing the card.

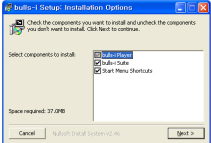
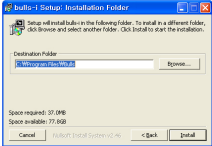
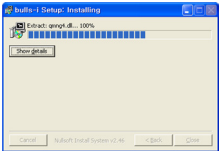



- If the microSD card is removed while the power is connected to the body (recording is being carried out), the stored files can be damaged.

4. Using bulls-i Only Viewer

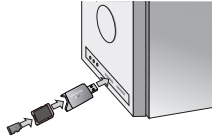


Program Installation

The recorded images can be replayed on computers through bulls-i only viewer.

- 1 Unzip the zipped files of the downloaded program and then double-click the "setup.exe" file to run the program. The exclusive program can be downloaded on the home page of the producer: www.bulls-i.com> Download >
- 2 Select the folder in which you want to install the program and press the [Install] button.
- 3 If the installation is complete, press the [Close] button.
- 4 A program icon is created on the computer background.
bulls-i Viewer: bulls-i only viewer program
bulls-i Suite: Launcher program

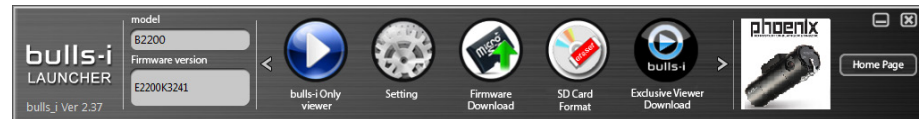
4. Using bulls-i Only Viewer

Running Program

- 1 **Connecting the microSD memory card to the computer**
Insert the microSD card into the USB gender and then connect it to the USB terminal of the computer.
 - 2 **Running Program**
Run the launcher program clicking the program icon of the background.
- While inserting the microSD card into the USB gender, check whether the front and rear directions of the card are accurate.
- 3 **The launcher program runs on the computer.**
 - The viewer and launcher program are coupled to each other while running.

4. Using bulls-i Only Viewer

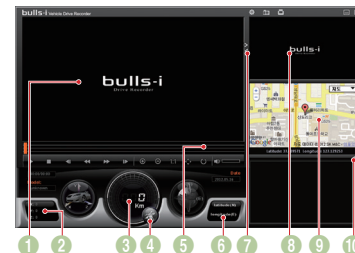
How to Use Launcher Program



	Name of Each Part	Function
1	Product Model Name	When the microSD card is inserted, the model name appears.
2	Product Firmware Version	When the microSD card is inserted, the current firmware version appears.
3	Viewer (Analysis) Program	The exclusive viewer program is run through the program.
4	Setting	The function setting of viewer program is carried out.
5	Firmware Download	The latest firmware can be downloaded.
6	SD Card Format	The microSD card format can be easily implemented on PCs.
7	Viewer Download	The latest exclusive viewer can be downloaded.
8	New Product Information	The information on the new products of bulls-i can be checked.
9	Website Shortcut	It is the shortcut to bulls-i website.

4. Using bulls-i Only Viewer

bulls-i Only Viewer






	Name of Each Part	Function
1	Main Display	The images captured by the camera are played.
2	3-Axis Sensor Value	The shock values "X," "Y" and "Z" of shock sensor are indicated.
3	Autometer	The routing velocity of the car is indicated. (Products coupled with GPS system)
4	GPS Reception	GPS reception status is indicated. (Products coupled with GPS system)
5	Replay Progress Indicator	The progress status of the video being played is indicated.
6	Location Coordinate Values	The information about the latitude and longitude from GPS is shown. (Products coupled with GPS system)
7	Main/Sub Screen Conversion	The main video screen and sub video screen are converted.
8	Sub Display	The images captured by the rear camera are played.
9	Vehicle Location Indicator Map	The vehicle location information from Google Maps is shown.
10	Opening Files	The searching and opening of the file to be replayed can be performed.



- When you use the map functions, your computer must be connected to the Internet. To be able to use the functions, you have to install Microsoft Internet Explorer 7 or later.
- Regarding the map function, while the image recording during driving is done, maps may not be displayed due to bad GPS reception.
- The map function is supported only for the models with a built-in GPS module.












4. Using bulls-i Only Viewer

Control of bulls-i Only Viewer

	Name of Each Part		Function
1		Setting	The operating environment of the body is set.
2		Screenshot	It is used to capture images immediately and store them. (PNG, JPG)
3		Printer	Images are outputted by printer.

4. Using bulls-i Only Viewer

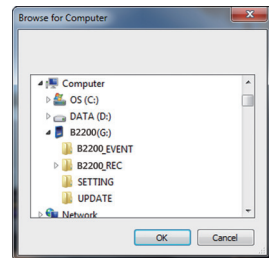
Control of bulls-i Only Viewer

	Name of Each Part		Function
1		Replay	The file containing the selected images is replayed.
2		Pause	The images being played are stopped for a while.
3		Stop	The images being played are stopped and the play goes back to the beginning.
4		Previous File	The file prior to that containing the images that are being played is replayed
5		1 Frame Backward	The image goes 1 frame backward.
6		1 Frame Forward	The image goes 1 frame forward.
7		Next File	The image just after that being played is played.
8		Enlargement	The image being played is enlarged.
9		Reduction	The enlarged image is reduced.
10		1:1 Ratio	The enlarged image is reduced in the original ratio.
11		Movement	The enlarged image is moved to a different position that the user wants.
12		Image Rotation	The image being played is rotated upward and downward.

4. Using bulls-i Only Viewer

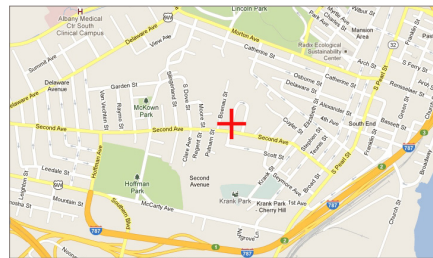
Fetching Recorded Image Data

Select the route through which the images you want have been stored after pressing the button.



Checking Driving Route (GPS)

The GPS location information is shown on the map along with the routing information.



GPS Location Information

- This function is supported only for the products with an exterior GPS.
- This function works only when the Internet is connected.

4. Using bulls-i Only Viewer

Other Operation Functions

Full-size Image: If you right-click on the screen, the image is enlarged to the full size.



4. Using bulls-i Only Viewer

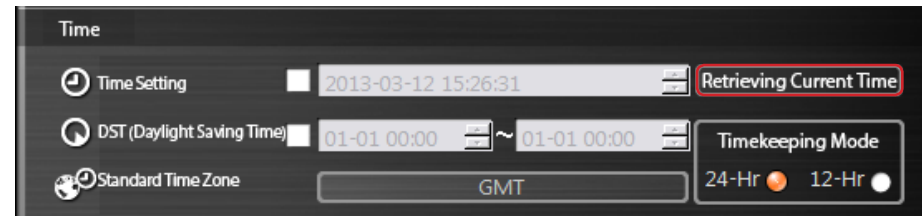
Setting Program



Image/ Sound	Resolution	The selection of maximum and minimum resolution of product is possible.
	Image Quality (Definition)	The video recording quality is set.
	FPS (Frames Per Second)	FPS stands for Frames Per Second: The frames that can be recorded in a second. (Low: 15 fps, Medium: 24 fps, High: 30 fps)
	Voice Recording	Voice & Sound recording function ON/OFF
Time	Speaker Volume	The volume of buzzer sound and voice guidance sound is set.
	Time Setting	The recording time of the body is set up. Time can be set just to the time on the computer by retrieving the current time. (Check whether the time on the computer is the standard time.)
	DST (Daylight Saving Time)	Under the DST system, clocks are adjusted forward one hour. In the regions where the DST system is practiced, time can be set automatically through this function. When the preset date arrives, the time of product is moved ahead by 1 hour.
	Standard Time Zone	The selection of standard time zone of each nation can be done through the function.
Function	Shock Sensitivity	The sensitivity of shock sensing sensor is set.
	Number of Event Files	The number of event files that can be stored is adjusted.
	Parking Mode	The parking mode is set through the function.
	Motion Sensitivity	The motion perception sensitivity during parking can be adjusted.
Viewer Setting	Battery Discharge Blocking Voltage	The battery discharge blocking voltage during parking mode can be set.
	Speed Unit	The speed unit can be chosen.
	Security LED	The operating status of security LED during parking is set.
	Language	The change of language shown on the viewer is possible.
	Speed Unit	The selection of speed unit shown on the viewer can be done.

4. Using bulls-i Only Viewer

Setting Time

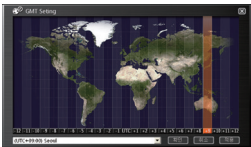


The user can set the time that he/she wants.
If the user selects the menu "Retrieving Current Time," time is set just to the time on the computer.

4. Using bulls-i Only Viewer

GMT Setting (Time Zone)

The standard time zone corresponding to the region of each country is selected.



microSD Memory Card Storage Folder

Folder Name	Note
REC	<ul style="list-style-type: none">• The files of continuous driving recording and parking recording, including motion recording, are stored.<ul style="list-style-type: none">- Continuous driving recording: per 1 min.- Motion parking recording: per 30 sec. / Continuous parking recording: per 1 min.E.g.) Continuous driving recording: 20120412_111535_I.avi, Parking recording: 20120412_111535_P.avi
EVENT	<ul style="list-style-type: none">• Shock recording and event recording during parking are stored.<ul style="list-style-type: none">- Event (Shock) recording: per 30 sec. (Basic capacity: 10-40 files stored)- Event recording during parking: per 30 sec.E.g.) Event during continuous driving recording: 20120412_111535_I.avi, Event during parking recording: 20120412_111535_P.avi
UPDATE	<ul style="list-style-type: none">• The folder is used for the latest firmware update.• In the folder is stored the "Text (*.txt)" file through which you can check the firmware version.

4. Using bulls-i Only Viewer

Firmware Upgrade

- 1 Connect the microSD memory card to the computer.
- 2 Create the "UPDATE" folder in the microSD card.
- 3 Copy the firmware file into the "UPDATE" folder.
- 4 Connect the microSD card to the body and connect the power.
- 5 Once the power is connected, the firmware is upgraded, the body reboots and the upgrade process is completed.



- Do not forcibly turn off the power or remove the microSD card while the firmware is being upgraded. The system can malfunction.
- The file system for the microSD card shall necessarily be the FAT16 or FAT32. Other file systems including the NTFS are not supported.

5. Product Specifications & Product Certification Process

Product Specifications

Classification		ETK-B2200
Camera	Image Sensor	2-megapixel
	Channel	1 channel
	Angle of View	130°
	Image Compression Mode	H.264
Recording	Resolution	1280X720(HD)
	Frame	30 fps max.
	Recording Mode	Continuous/Event/Parking Mode
	Event Mode	Perception of 3-axis shock sensor
	Event Recording Mode	Applied for 15 sec. before and after shock (30 sec. total)
GPS	Parking Mode	Motion detection, 3-axis shock sensor
	Velocity, Location, Google Map	Supported
Storage	Basic Capacity	microSD memory card 8GB or 16GB
	Maximum Capacity	32GB
Audio	Input	Built-in mike
	Output	Speaker (Voice guidance)
Power	Main Power	DC 12-24V, 200mA
	Sub Power (Built-in)	Supercapacitor
Others	Voice Guidance	Supported
	Security LED	Supported



- The firmware update of this product is possible. Therefore, if the user needs to update the firmware for the quality improvement of product, the update is possible. The update files can be downloaded on our company's home page. [/ i i ž g ^ e ž ca _ ž](#)
- The specifications of this product can be modified without any prior notification to the users for the improvement of product performance.

5. Product Specifications & Product Certification Process

Product Certification Process



KCC
Certificate of Broadcasting and Communication Equipment



CE
Certificate of Safety and Quality for the European Market



FCC
Certificate of Federal Communications Commission of the USA



RoHS
Restriction of Hazardous Substances Directive

6. Points To Be Checked Before Reporting Of Product Failure

If the product does not function normally, please check the following things before requesting warranty service.
If the problem remains also after the follow-up measures, refer to the Call Center.

Symptom	Measure
The recorded images are not stored in the microSD memory card.	• Remove the microSD memory card in use and insert it once more.
The product cannot find the memory card.	• Format the microSD memory card in use and try to use it again. • If the microSD memory card has already been used for a long time, replace it with a new one.
What happens if the capacity of microSD memory card is not sufficient?	• The images are deleted sequentially from the oldest ones and the new data is recorded.
The image quality of the recorded images is not good.	• Check whether the camera lens protection film has been removed. • Check whether there are foreign materials on the camera lens of the product. • Make sure that there is no obstacle, tinted sun film and other foreign substance on the front glass of the car.
The product does not work at all.	• Check the power connection status of the product. • Check whether the genuine power cable provided by our company has been used for the connection.

7. Product Warranty



About After-Sales Service

- Our company, Ether Technology Inc., according to the classified “Consumer Dispute Resolution Criteria (CDRC),” guarantees the quality of our products as follows:
- For the after-sales service requests necessary for product repair, please visit a nearby store.
- The determination of compensation and decision notification shall be done within 7 days after the requests. Once the compensation has been decided, the remaining procedure shall be completed within 14 days after the date of notification.

Free Service

Within 1 year (warranty period) after the purchase, for the failures happening under normal conditions, free services are provided. (In case of repair requests that do not concern product failure, or that are related to the faults or the commercial intent of the user, free services are not offered.)
When the products are used as a business method, the warranty period shall be shortened to the half (6 months).

Consumer Damage		Compensation	
		During Warranty Period	After Warranty Period
Defects and malfunctions arising under normal use during the warranty period	Need for critical repair within 10 days of purchase	Replacement or refund	Not applicable
	Need for critical repair within 1 month of purchase	Replacement or no cost repair	
	Product damage that arose during transportation or installation	Replacement	
	Need for critical repair within 1 month of receiving a replacement	Refund	
	Replacement not available	No cost repair	Paid servicing
	Can be repaired		
	Malfunction with the same root cause occurs 3 times		
	Malfunction with the same root cause occurs 4 times		
	Malfunctions with different root causes occur 5 times		
	Misplacement of a product handed in by the consumer for repair purposes	Replacement or refund	Refund following deduction of depreciation value and addition of 10% of the depreciation value
Malfunctions caused by consumer negligence	Repair not possible because of parts unavailability		Refund following deduction of depreciation value
	Required parts are available, but the repair cannot be performed		Product replacement following deduction of paid servicing fee and depreciation value
	Cannot be repaired	Product replacement following deduction of paid servicing fee	Product replacement following deduction of paid servicing fee and depreciation value
	Can be repaired	Paid servicing	Paid servicing

Refund: Refund of purchase price (receipt required for all refunds)

Product Name	Car Black Box	Date of Purchase		Serial Number	
Model Name	ETK-B2200	Seller		Purchase Price	

Charged Service

1) Request not regarding failure

When the request is non-failure-related, the user will have to pay the charge.
Make sure that you read the instructions. (When repair is not possible, special criteria will be applied.)

2) Failure caused by user’s fault

- The failures that are caused after the user has disassembled or modified the product without complying with the instructions; those caused by user’s inattention, e.g., submersion, breakdown and damage,
- When any person who is not a technician of Ether Technology Inc. or authorized collaborative companies has repaired the product,
- When any component that is not permitted to be used by our company has been used,
- When the “Warning and notice for Safety” of the instructions is not observed.

3) Other cases

- Failures caused by natural disasters (fire, damage from sea water, flood damage, thunderbolt, etc.),
- When the life expectancy of components, including any accessories, has expired,
- The case that the product has been used under an unstable power and could not be protected at the level of impulse voltage.